APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,731	06/19/2006	William M. Dries	011765-0325202	9830

909   7590   08/31/2009
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EXAMINER
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ART UNIT	PAPER NUMBER
2416	

MAIL DATE	DELIVERY MODE
08/31/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _04 May 2009_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-23_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _3-7,9 and 16-18_ is/are allowed.

6)☒ Claim(s) _1-2, 10-15, 19-23_ is/are rejected.

7)☒ Claim(s) _8_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Final Action

Response to Amendment

1.   Applicant's Remarks/Arguments filed on 5/4/2009 have been considered. Claims 1-23

are currently pending.

2.   Acknowledgement is made of the amended claims 10, 12-13, 19-20 with respect to the

claim objections set forth in the previous Office action. The corrections are acceptable and the

claim objections have been withdrawn.

3.   Acknowledgement is made of the amended claim 14 with respect to the 35 U.S.C. 101

rejection set forth in the previous Office action. The corrections are acceptable and the 35

U.S.C. 101 rejection to claims 14-19 has been withdrawn. However, for claim 20, it is noted that

one of the method steps needs to be tied to a machine or device and therefore by amending the

preamble of the claim to include "a network analyzer" does not overcome the rejection.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
> any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
> requirements of this title.

4.   Claim 20 stands rejected under 35 U.S.C. 101 as not falling within one of the four

statutory categories of invention. While the claims recite a series of steps or acts to be

performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to particular machine, or

(2) transform underlying subject matter (such as an article or material) to a different state or

thing. See page 10 of In Re Bilski 88 USPQ2d 1385. The instant claims are neither positively

tied to a particular machine that accomplishes the claimed method steps nor transform

underlying subject matter, and therefore do not qualify as a statutory process. The method steps

of enhancing resource management for routing events, as claimed in claim 20, are broad enough

that the claim could be completely performed mentally or without a machine nor is any

transformation apparent. It is noted that one of the method steps needs to be tied to a machine or

device and therefore by amending the preamble of the claim to include "a network analyzer"

does not overcome the rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1-2, 10-15, 19-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Alexander et al. (US Publication 2003/0002474) in view of Yoon et al. (USP 7,006,504).

Regarding claim 1, Alexander discloses a data merge unit (merging network, Fig. 2) for

providing an interleaved data stream (creating interleaved groups, paragraph 0036), the data

stream including data frames received on two or more input channels (the data stream including

data received a plurality of input buses, paragraphs 0034-0035, Fig. 2), wherein complete data

frames from each of the two or more input channels are arranged in time-slots of the interleaved

data stream (generating time-multiplexed constant-width output data stream, paragraph 0020),

the data merge unit (merging network, Fig. 2) comprising:

an input unit to receive data frames (shuffle buffer system to receive data streams,

paragraph 0035 and element 7, Fig. 2) from two or more input channels (from a plurality of input

buses, paragraph 0035 and element 5, Fig. 2);

a frame merge buffer (shuffle buffer) arranged to receive data frames from the two or

more input channels via the input unit (reorders incoming data from the input buses) and store

said data frames (and buffers them, paragraph 0036, and Fig. 2); and

an output generator to generate the interleaved data stream (permutation network to

create interleaved groups, element 9, Fig. 2), the output generator being configured to select data

frames from the frame merge buffer (based on the input data width) and arrange said data frames

in the interleaved data stream (rearranges the different data streams, paragraph 0036, and

element 9, Fig. 2).

Alexander may not explicitly show selecting complete data frames of a networking

protocol and arranging said complete data frames of the said networking protocol in the

interleaved data stream.

However, Yoon teaches retrieving entire AAL5 (networking protocol) frames and

interleaving the frames by the frame unit (col. 3, lines, 12-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the frame merging method of Alexander with the teaching of

Yoon in retrieving entire AAL5 (networking protocol) frames and interleaving the frames by the

frame unit such that the frame output generator of Alexander will show selecting complete data

frames of a networking protocol and arranging said complete data frames of the said networking

protocol in the interleaved data stream.

The motivation to do so is to distinguish start and end of an AAL5 frame.

Regarding claim 2, Alexander discloses a data merge unit according to claim 1, in which

the input unit is arranged to identify the end of each of said data frames (special spatial

boundaries, paragraph 0022) and generate a pointer to identify the location of the end of each of

said data frames in the frame merge buffer, for use in generating the interleaved data stream

(creating interleaved words having a width wider than any of the received streams of data,

paragraph 0022).

Regarding claim 10, Alexander discloses a data merge unit according to any of claims 1

to 9, the data merge unit being a hardware data merge unit (merging network comprises a

plurality of hardware networks such as shuffle buffer network, permutation network, and

pipelined butterfly network, paragraphs 0021-0022, and Fig. 2).

Regarding claim 11, Alexander discloses a data merge unit according to claim 10, in

which the data merge unit is arranged in hardware selected from the group consisting of one or

more Application Specific Integrated Circuits, one or more Field Programmable Gate Arrays, or

any other suitably configured hardware (multi-stream merge apparatus, Figs. 1 and 2).

Regarding claim 12, Alexander discloses a network analyzer, comprising:

a data merge unit according to claim 1 (merging network, Fig. 2); and,

a logic unit (pipelined butterfly network, paragraph 0020 and element 11, Fig. 2) to

analyze the interleaved data stream provided by said data merge unit (rearranging the received

data streams into a time-multiplexed constant-width output data stream, paragraph 0020) and

store said data frames (receiving a plurality of data streams, paragraph 0020).

Regarding claim 13, Alexander discloses a network analyzer according to claim 12, in

which the logic unit is configured to provide one or more functions selected from the group

consisting of network management and network load balancing (providing functions to manage

multiple data streams, paragraph 0020).

Regarding claim 14, Alexander discloses a method of producing an interleaved data

stream of data frames received on two or more input channels in a network analyzer, the

interleaved data stream being made up of complete data frames from each of the two or more

input channels arranged in defined time-slots, the method comprising:

receiving at the network analyzer one or more data frames on two or more input channels (shuffle buffer system to receive data streams from a plurality of input buses, paragraph 0035 and elements 5, 7, Fig. 2);

storing said received data frames of a networking data protocol in a frame merge buffer (shuffle buffer receives and buffers the received data streams, paragraph 0036 and Fig. 2); and,

selecting data frames from the frame merge buffer (permutation network to create interleaved groups from the shuffle buffer, element 9, Fig. 2) and arranging said data frames in the interleaved data stream (rearranges the different data streams, paragraph 0036, and element 9, Fig. 2).

Alexander may not explicitly show selecting complete data frames of a networking protocol and arranging said complete data frames of the said networking protocol in the interleaved data stream.

However, Yoon teaches retrieving entire AAL5 (networking protocol) frames and interleaving the frames by the frame unit (col. 3, lines, 12-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the frame merging method of Alexander with the teaching of Yoon in retrieving entire AAL5 (networking protocol) frames and interleaving the frames by the frame unit such that the frame output generator of Alexander will show selecting complete data frames of a networking protocol and arranging said complete data frames of the said networking protocol in the interleaved data stream.

The motivation to do so is to distinguish start and end of an AAL5 frame.

Regarding claim 15, Alexander discloses a method according to claim 14, in which the method comprises:

storing a pointer to identify the end of each of said received data frames (special spatial boundaries, paragraph 0022); and,

using said stored pointers to generate said interleaved data stream (creating interleaved words having a width wider than any of the received streams of data, paragraph 0022).

Regarding claim 19, Alexander discloses a method according to claim 14, in which the interleaved data stream is generated at full line rate of the input channels (output data stream having a width equal to the sum of the widths of the input data streams, paragraph 0020).

Regarding claim 20, Alexander discloses a method of analyzing a network using a network analyzer, the method comprising:

producing an interleaved data stream of complete data frames received on two or more input channels according to the method of claim 14 (shuffle buffer system to receive data streams from a plurality of input buses, paragraph 0035 and elements 5, 7, Fig. 2), the data

channels associated with a network to be analyzed (associated with telecommunications network,

paragraph 0002);

providing said interleaved data stream to logic to analyze said data stream buffer

(permutation network to create interleaved groups from the shuffle buffer, element 9, Fig. 2);

and,

analyzing said data stream, thereby analyzing the network (analyzing data streams,

paragraphs 0035-0037, 0039).

Regarding claim 21, Alexander discloses a data merge unit, comprising:

input means to receive data frames from two or more input channels (shuffle buffer

system to receive data streams from a plurality of input buses, paragraph 0035 and elements 5, 7,

Fig. 2);

data merge means (shuffle buffer system, permutation network, pipelines butterfly

network, paragraphs 0035-0037, 0039 and elements 7, 9, 11, Fig. 2) to merge data frames

received from the two or more input channels into a time division multiplexed interleaved data

stream (generating time-multiplexed constant-width output data stream, paragraph 0020),

wherein the data merge unit is arranged in hardware (multi-stream merge apparatus, Figs. 1 and

2).

Alexander may not explicitly show merging complete data frames of a networking

protocol.

However, Yoon teaches retrieving entire AAL5 (networking protocol) frames and interleaving the frames by the frame unit (col. 3, lines, 12-20).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the frame merging method of Alexander with the teaching of Yoon in retrieving entire AAL5 (networking protocol) frames and interleaving the frames by the frame unit such that the frame output generator of Alexander will show selecting complete data frames of a networking protocol and arranging said complete data frames of the said networking protocol in the interleaved data stream.

The motivation to do so is to distinguish start and end of an AAL5 frame.

Regarding claim 22, Alexander discloses a data merge unit according to claim 21, in which the hardware is selected from the group consisting of one or more Application Specific Integrated Circuits, one or more Field Programmable Gate Arrays, or any other suitably configured hardware (multi-stream merge apparatus, Figs. 1 and 2).

Regarding claim 23, Alexander discloses a data merge unit according to claim 21, in which the data merge means is arranged when merging data into the time division multiplexed interleaved data stream to ensure only complete data frames are provided in the time division multiplexed interleaved data stream (generating time-multiplexed constant-width output data stream, paragraph 0020).

Allowable Subject Matter

6.   Claims 3-7, 9, 16-18 are allowed.

Claim 8 is objected to as being dependent upon a rejected base claim, but would be

allowable if rewritten in independent form including all of the limitations of the base claim and

any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

In claim 3, a data merge unit for producing an interleaved data stream, the data stream

including data frames received on two or more input channels, wherein complete data frames

from each of the two or more input channels are arranged in defined time-slots of the interleaved

data stream, the data merge unit comprising:

in which output generator is operable in a first mode to select complete data frames in the

frame merge buffer from an identified input channel and output the selected frames in a

corresponding time-slot of the interleaved data stream for that input channel independently of

other input channels and, in a second mode in which complete data frames from two or more of

the two or more input channels are selected from the frame merge buffer and merged and

provided in a common time-slot of the interleaved data stream.

In claim 8, a data merge unit according to claim 1, in which the input unit comprises a

round-robin input arbiter arranged to service each of the two or more input channels and provide

data frames therefrom to the frame merge buffer.

In claim 16, a method of producing an interleaved data stream of data frames received on two or more input channels in a network analyzer, the interleaved data stream being made up of complete data frames from each of the two or more input channels arranged in defined time-slots, the method comprising:

in a first mode outputting complete data frames from a selected input channel in a corresponding time-slot of the interleaved data stream for that input channel independently of other input channels and in a second mode merging complete data frames from at least two of the two or more input channels and providing said merged data in a common time-slot of the interleaved data stream.

Response to Arguments

7.   Applicant's arguments with respect to claims 1-2, 10-15, 19-23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

9.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The

examiner can normally be reached on 9:00 am - 5:30 pm.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

                                        /Chi H Pham/
                                        Supervisory Patent Examiner, Art Unit
                                        2416

/K. M./
Examiner, Art Unit 2416